DOCUMENT RESUME

ED 305 464 CE 052 182

AUTHOR Jacobs, Ronald L.; And Others
TITLE Effects of Feedback for Training and Development: Selected Research Abstracts. Training and Development Research Report.
INSTITUTION Ohio State Univ., Columbus. Coll. of Education.
SPONS AGENCY Honda of America Mfg., Inc., Marysville, OH. Associate Development Center.
PUB DATE Feb 88
NOTE 35p.
PUB TYPE Reports - Research/Technical (143) -- Reference Materials - Bibliographies (131)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Abstracts; Adult Education; *Feedback; *Interpersonal Communication; Job Performance; *Job Training; Motivation; *Reinforcement; Research Reports; *Staff Development; *Supervisory Methods

ABSTRACT

This report presents 23 research abstracts that investigate the effects of feedback on job performance. A narrative that precedes the abstracts lists generalizations and conclusions that are representative of the studies presented in the report. It concludes that the studies reviewed confirm that feedback improves the performance of subordinates. The suggestion is made that providing interpersonal communication skills to supervisors and managers should be highly valued, but only if those skills involve how to recognize feedback opportunities and how to deliver feedback to subordinates. The following generalizations are made: some feedback is always available to employees in the work setting; feedback promotes more efficient acquisition of new job tasks; feedback affects motivation; the more specific the feedback, the more rapid the improvement and the higher the level of performance; the longer the delay in giving feedback, the less effect the feedback has on performance; when feedback is decreased, performance level drops; and when feedback is removed, those who maintain their performance probably have developed some substitute source of feedback. The research abstracts are arranged in this format: author(s), year, title, source (publication or journal) and volume number, and pagination; purpose; participants; method; results; and discussion. (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED305464

Effects of Feedback for Training and Development: Selected Research Abstracts

Ronald L. Jacobs, Ph.D.
Gayle Shibano
Tricia M. Emerson

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

R Jacobs

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

TRAINING & DEVELOPMENT

RESEARCH REPORT

Graduate Program in Training & Development
The Ohio State University

THE OHIO STATE UNIVERSITY

ASSOCIATE DEVELOPMENT CENTER
HONDA
Honda of America Mfg., Inc.

CE052182

February 1988

FOREWORD

This Training and Development Research Report presents 23 research abstracts investigating the effects of feedback. The research has consistently shown that feedback improves the performance of individuals under a variety of conditions.

The significance of this for training and development lies in at least two major areas. First, the effectiveness of many supervisors and managers can be judged by their skills in providing feedback to subordinates, primarily in interpersonal situations. To recognize feedback opportunities and deliver feedback effectively are goals that can be accomplished through training. And, any work situation can also be thought of as a human performance system. If a human performance system fails to provide feedback or if this component is inadequate, then job performance will certainly suffer. Understanding the role of feedback assists in diagnosing all possible causes of job performance problems.

We wish to personally thank Mr. John A. Christman, Manager of Associate Development, Honda of America Manufacturing, for his support of this Report.

Ronald L. Jacobs, Ph.D.
Gayle Shibano
Tricia Emerson

The Ohio State University

Introduction

Our original goal was to address a practical question of interest to many training and development (T&D) professionals: "What is the value of providing interpersonal communication skills to supervisors and managers?" Consideration of this question led us to conclude that few empirical studies have precisely addressed this question and that communication skills are largely used to provide others with knowledge about their job performance. Thus, we found the following question more useful in guiding our literature search: "What are the effects of providing feedback to subordinates about their performance." The studies selected were limited to those involving task-oriented settings, superordinate-subordinate relationships, or consequences relevant to individuals and groups in work settings.

Feedback can be defined as the process of providing individuals with knowledge of the results of their actions. Feedback serves two functions: (1) directs behavior toward attaining a goal, and (2) stimulates greater effort. The principle that feedback results in improved performance is one of the most dependable and time-tested relationships in modern-day psychology. The principle holds true for children and adults, for groups as well as individuals, and for a wide variety of learning: cognitive, psychomotor, and attitudinal.

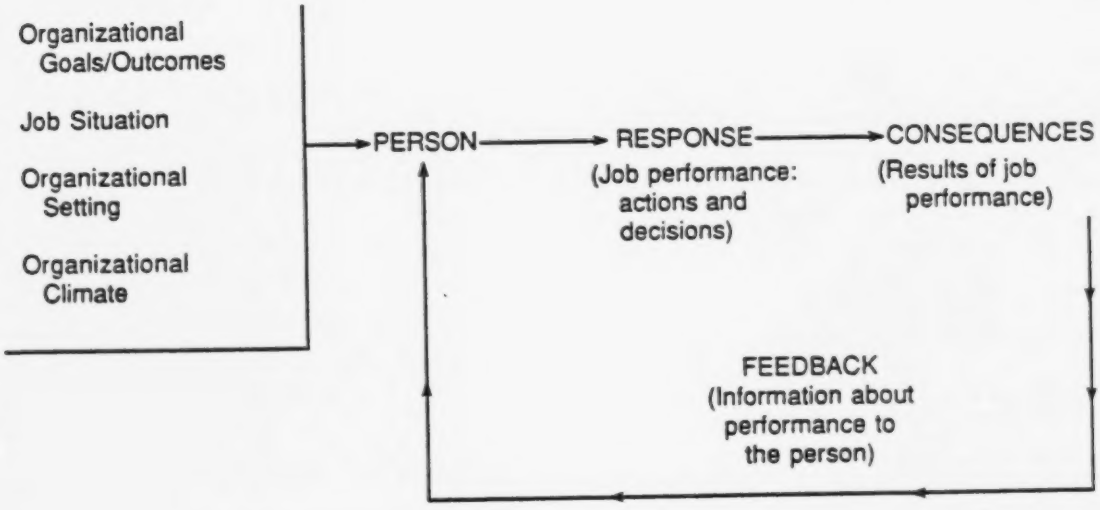
The importance of feedback for job performance has been repeatedly emphasized in recent years. Research on performance appraisal, management by objectives, and job enrichment has shown the

need for employees to know how they are doing on their jobs. Employees often say that the most valuable interpersonal source of feedback is from their superiors (supervisors and managers). However, much evidence exists to suggest that superiors are poor sources of feedback--either because they lack the skills to provide it or because they are not aware of the effect it has, positive or negative, on the performance of others.

Providing information about the effects of feedback serves another purpose as well. It reminds us that structured feedback provides the most powerful means available to improve job performance, with the least amount invested. As most T&D professionals realize, training programs represent one of the most costly methods to improve job performance. Certainly feedback and training should not be used to address the same types of performance problems. Training should be used when employees cannot perform because they do not have the proper knowledge and skills. Feedback should be used when employees can perform, but are inhibited from doing so by a lack of knowledge about their efforts, often leading to a deterioration in performance. But each of these problem situations may appear quite similar to the casual observer, possibly resulting in a more costly and less effective decision about how to solve the problem. Careful analysis can reveal those instances where additional feedback is the most appropriate solution to existing or anticipated performance problems.

Within the performance improvement process, feedback can be considered part of a human performance system. A performance system

depicts the interrelatedness of people and their environment in a work setting. All performance systems have five major components: (1) a job context that exists irrespective of the person performing, (2) the abilities, motivation, actions of the person, (3) the responses of the person that are required for performance, (4) the consequences of the performance after making the response, and (5) the feedback on the consequences. If any of these components are missing or inadequate then performance will likely suffer. This is especially critical with the feedback component since it links all other components back to the two major inputs of the system: the job context and the person performing the job.



Conclusion and Generalizations

In conclusion, the studies reviewed confirm that feedback improves the performance of subordinates. In regard to the original question, we can say with confidence that providing interpersonal communication skills to supervisors and managers should be highly valued, but only if those skills involve how to recognize feedback opportunities and how to deliver feedback to subordinates.

The following generalizations and comments represent the studies presented here as well as the feedback literature in general:

1. For all practical purposes, there is always some feedback available to employees in the work setting. But, random or uncontrolled feedback can result in undesirable or unanticipated outcomes. In order for feedback to result in outcomes valuable to the organization as well as individuals, feedback must be structured and intentional, within both formal and informal social situations, and must fit the performance expectations of the persons involved. To be truly effective, feedback must be carefully managed.

2. Feedback promotes more efficient acquisition of new job tasks. For example, use of structured on-the-job training and coaching techniques have afforded greater opportunities for supervisors and managers to interact with subordinates in situations where feedback can be a useful training tool. This has resulted in benefits to the organization (less training time), to supervisors and managers (more structured opportunities to provide feedback), and to trainees (greater opportunities for recognition, promotion, and

monetary rewards).

3. Feedback affects motivation. Motivation describes our inner desire or predisposition to do one thing as opposed to some other thing. Motivation is ultimately expressed by our actions such that they can be judged by others. For example, feedback has been shown to affect job attendance and alertness on the job, both of which we can interpret as indicators of work motivation. Or, we can infer that employees are motivated to do quality work after they have been praised for their active participation in a quality circle group. For whatever reasons, feedback increases motivation as suggested by the actions of people after feedback has been introduced.

4. The more specific the feedback, the more rapid the improvement and the higher the level of performance. Other things being equal, more specific feedback guides the attention of the performer to those performance areas requiring improvement (commonly referred to as formative feedback) and those areas where performance meets present expectations. Some research has shown a point where additional knowledge will not improve performance and may even lead to deterioration of performance. Varying the specificity, timing, and source of the feedback will differentially affect performance. To be effective, however, feedback must be directed to the specific performance of interest.

5. The longer the delay in giving feedback, the less effect of the feedback on performance. Some research has shown that supervisors will delay providing positive feedback more than providing negative feedback. This might result in keeping good

performers uninformed about their efforts. Other research, however, has shown that delayed feedback may be beneficial, particularly in the learning of conceptual information. In this case, moderately delayed feedback (the next day) may allow individuals time to reflect on their actions and then generate their own feedback about the results of their actions. A possible compromise might be to combine the desirable aspects of immediate and delayed feedback. Instead of providing feedback about the correct response, the supervisor could guide the employee through a series of questions until the correct response becomes self-evident, which is then made explicit. Providing immediate feedback while requiring performers to reflect upon their actions may be the most appropriate type of feedback in many job performance situations.

6. When feedback is decreased, then performance levels drop. Obviously, different people require different amounts of feedback. A manager might expect feedback in different forms and time intervals from that of an hourly employee. Yet regardless of organizational status, all individuals require feedback of some kind to maintain their performance levels. If feedback is decreased, then we can expect that performance levels will eventually drop or become erratic. Feedback levels can be maintained through formal approaches (periodic performance appraisals) and informal approaches (brief social encounters in the work setting). Providing supervisors and managers the skills to combine these two approaches might prevent any unintentional decreases in feedback.

7. When feedback is removed, those who maintain their performance probably have developed some substitute source of feedback. Many of us have observed individuals who seem to "toil quietly" without need of feedback to accomplish their work. Some evidence suggests that these individuals have developed a way of substituting feedback from external sources to internal sources, particularly when a pre-established goal has been made explicit. Some high job performers who do not receive regular feedback report that they use mental imagery to "picture" how the results of their efforts will appear. Achieving a perceived match between the image and actual result seems to be sufficient supplemental feedback for these individuals. Obviously, it is clear that this assertion cannot be fully tested. Yet, the results support the notion that intrinsic sources of feedback could have great practical significance in organizational settings. Many employees today are involved in complex, isolated work settings, limiting access to structured external feedback.

RESEARCH ABSTRACTS

Alavosius, M. P., & Sulzer-Azaroff, B. (1986). The effects of performance feedback on the safety of client lifting and transfer. Journal of Applied Behavior Analysis, 19, 261-267.

Purpose: To test the viability of feedback as a strategy to improve safety with which caregivers lift and transfer physically disabled clients.

Participants: Six direct care staff members working in a state residential school for the mentally retarded. The infirmary unit, serving clients with multiple physical handicaps, was the setting for the study.

Method: Prior to the start of the project, procedures to establish baseline performance levels were used.

The participants were observed on-the-job and their performance assessed by the experimenters using checklists containing task analyses of lifting/transfer techniques.

Written and verbal feedback was provided to each subject. Specific comments describing how safely they were performing during observations were noted as well as specific suggestions for improvement. Feedback was provided weekly to each subject. Follow-up observations were conducted periodically to evaluate the maintenance of safe performance.

Results: Performance tended to be variable during baseline. Following initial feedback messages, the safety of all subjects' performance improved, although variability in technique persisted. With additional feedback, safety further improved and perfect, or near perfect, technique was observed.

Participant's responses in a feedback questionnaire were positive; all agreed that the feedback improved the safety of their transfers and recommended the procedures for use with their co-workers.

Discussion: Feedback increased the safety with which clients were lifted and transferred. The quality of the transfer techniques became more consistent over time.

The results of this study are consistent with previous research, which found feedback effective in enhancing caregiver performance and worker safety. As most studies of training have shown, behavior change does not tend to endure in the absence of support systems such as feedback.

Chapanis, A. (1964). Knowledge of performance as an incentive in repetitive, monotonous tasks. Journal of Applied Psychology, 48, 263-267.

Purpose: To isolate the motivational aspects of feedback from its informational and rewarding aspects. Various feedback aspects were identified in earlier studies in which knowledge of results were intentionally presented to be more causal than is usually the case. Results from these studies showed that feedback used for informational purposes only, still improved worker performance more than when no feedback was used.

Participants: 16 male undergraduates.

Method: Participants were asked to punch long sequences of random digits into a teletype, and were assigned to one of four groups.

Results: The results were as follows:

* No significant differences were found between the four groups. All groups performed at about the same level.

* All groups performed better during the first 15 minutes and last 15 minutes during each of the 24, one-hour testing periods.

Discussion: The importance of this study is that it contradicts previous research. The precise circumstances of providing feedback may be difficult to delineate in some cases. Since monetary rewards were not linked to performance, questions may be posed about the strength of the research treatments.

Cook, D. M. (1968). The impact on managers of frequency of feedback. Academy of Management Journal, 11, 263-277.

Purpose: To investigate the psychological impact on managers of certain aspects of performance reports.

Participants: PHASE ONE: 120 university students enrolled in four accounting classes. PHASE TWO: 134 managers of 59 different manufacturing companies, of varying sizes, geographically dispersed throughout the U.S.

Method: The study was divided into two phases. Phase one was a controlled experiment using a business simulation. Phase two was a field study in the actual business environment.

PHASE ONE: Students were randomly assigned to teams within each class for participation in a business simulation for 12 quarters. The frequency of feedback was varied across groups (classes). A questionnaire was used to measure the participant's attitudes after each quarter.

PHASE TWO: Managers complete a mail questionnaire in which they described, rated, and criticized the performance reports which they received during the preceding year.

Results:

* The attitudes of both the participants (phase one) and managers (phase two) were related to the frequency of feedback. Managers' ratings of performance reports were highest for daily reports and lowest for annual reports.

* Performance results were related to the frequency of feedback on performance. The level of performance was highest for weekly reports and lowest for annual reports.

* The attitudes of the participants and managers were related to the performance results as evidenced by the performance reports. Managers' ratings of performance reports was highest for above average performance reports and lowest for below average performance reports.

* The level of aspiration of participants and managers were raised after success in performance in the preceding period. 76 percent of managers indicated a raised level of aspiration following a successful performance report.

Discussion: The findings of the business simulation were corroborated by the field study. These results suggested that those who received fairly frequent reports tended to have better attitudes, better performances, and higher levels of aspiration.

Fisher, C. D. (1979). Transmission of positive and negative feedback to subordinates: A laboratory investigation. Journal of Applied Psychology, 64, 533-540.

Purpose: To verify that superiors are often unwilling to give negative feedback to subordinates and to determine whether there is a similar problem interfering with the transmission of positive feedback.

Participants: 168 college students enrolled in an introductory psychology course.

Method: Participants were assigned as managers to assess the performance of a confederate subordinate on the accuracy of completing an order form. Managers were divided into four conditions and asked to provide:

* Feedback with high performing subordinates
* Feedback with low performing subordinates
* No feedback with high performing subordinates
* No feedback with low performing subordinates

Results: The results are the following:

* Managers of low performing subordinates gave feedback after an average of 4.79 weeks, compared to managers of high-performing subordinates who waited an average of 6.01 weeks.

* Managers' ratings of low performance for feedback purposes were inflated compared to ratings of low performance when no feedback was provided to subordinates.

* Managers of low performers believed that reactions of subordinates would be unfavorable compared to managers of high performers.

* Managers who did not give feedback thought their subordinates liked them about the same amount regardless of the subordinates's level of performance. Managers who gave feedback to high performers thought these subordinates liked them more than the low performing subordinates.

Discussion: The overall conclusion of this study is that level of performance affects how a superior behaves in respect to giving feedback to subordinates. The unique result of this study concerned the distortion of the effect of feedback in terms of interpersonal attraction from the managers' perspective and variability of ratings when used for feedback purposes.

Grueller, M. M. (1980). Evaluation of feedback sources as a function of role and organizational level. Journal of Applied Psychology, 65, 24-27.

Purpose: To determine whether supervisors recognize the value that subordinates attach to different sources of feedback.

Participants: 26 supervisors and 63 of their subordinates in the track maintenance department of a large metropolitan transit authority (a public sector organization).

Method: Questionnaires were administered to participants. Subordinates were asked to evaluate the utility of six sources of feedback. Independently, their supervisors were asked to estimate how useful each of the sources were for the subordinates.

Sources of feedback:

* formal rewards from the organization
* informal assignment from the boss
* things the boss says about the way you do your job
* things your co-worker say
* comparisons you yourself make of your work to that of others
* information you receive from doing the work without anyone actually telling you (task feedback)

Results: Supervisors and subordinates disagreed on the value of particular sources of feedback. Supervisors rated the sources of feedback under their control (reward, boss, assignments) higher than subordinates; and rated those sources of feedback outside their control (co-workers, comparisons, task) lower than subordinates.

Discussion: This study showed that supervisors did not recognize the value that subordinates attached to different feedback sources. This could explain why subordinates sometimes feel uninformed, even when their supervisors report having provided a meaningful review of performance. In this case, the supervisor is focusing on one source while the subordinate is focusing on another. This may suggest a reason why management initiatives to improve feedback fail: their approach can easily be based on erroneous beliefs about the value of feedback to subordinates.

Harackiewicz, J. M., & Larson, J. R., Jr. (1986). Managing motivation: The impact of supervisor feedback on subordinate task interest. Journal of Personality and Social Psychology, 51, 547-556.

Purpose: To examine how supervisors determine types of performance feedback and its influence on subordinates.

Participants: 64 male and 48 female undergraduate students who were paid for their participation.

Method: The students were paired. One student from each team was assigned as the supervisor. The subordinate was required to solve a series of puzzles. The supervisors administered and scored the puzzles, and provided feedback. The supervisors were responsible for maintaining subordinate motivation.

Supervisors could give prewritten feedback at their discretion. Half the supervisors could give monetary rewards. Half received monetary awards based on their subordinates task enjoyment.

Results: Supervisors who could reward their subordinates used more controlling messages. This was true when the supervisor was not rewarded for task enjoyment. The number of controlling messages did not change when the supervisor was rewarded.

Supervisors who could reward their subordinates provided fewer positive competence comments. Subordinates who received positive competence information felt increased competence. These subordinates enjoyed the task more than the others.

Discussion: When a monetary reward structure was used, supervisors provided less feedback. They allowed the reward to serve as the feedback. Nevertheless, they exerted greater control due to their access to institutional power. This did not occur when the supervisor was rewarded for subordinate task enjoyment.

In addition, the supervisor increased controlling behavior when the subordinate performed poorly. However, this study found that greater supervisor control increased self-perceived competence. This increased occurred only when the subordinate was not monetarily rewarded.

Hinton, B. L., & Barrow, J. C. (1975). The superior's reinforcing behavior as a function of reinforcements received. Organizational Behavior and Human Performance, 14, 123-143.

Purpose: To determine if superiors reinforce subordinates on reciprocal basis. To analyze differences between feedback provided by one and two supervisors.

Participants: 126 volunteer male undergraduates enrolled in an organizational behavior course at Indiana University.

Method: The group was divided into groups of superiors and subordinates. The subordinate was given a simulated task. Each subordinate's decision was reflected in the superiors earnings. The superior then gave reinforcement to the subordinate.

The superior could give:

* Positive economic reinforcement
* Negative economic reinforcement
* Positive evaluative reinforcement
* Negative evaluative reinforcement

Results: Positive economic and evaluative reinforcement were reciprocally influenced by a subordinates behavior. This was true when reinforcement was sole or shared by another supervisor. Negative economic and evaluative reinforcement were not reciprocal. Superiors were willing to receive losses without giving similar losses to subordinates. Those superiors with sole reinforcement responsibility were less likely to use positive rewards. Superiors gave significantly higher positive economic rewards when reinforcement was shared.

Discussion: This study indicated that superiors did not like to use negative economic reinforcement. This is because it was viewed as punishment. By providing economic rewards during poor performance, the superior was trying to motivate the subordinate to improve. Supervisors were more likely to use negative evaluative reinforcement, such as a verbal reprimand. When reinforcement power is shared, supervisors may compete for subordinate favor. Rewards may be influenced by this competition. Negative reinforcement is used less in such cases.

Ilgen, D. R., Mitchell, T. R., & Fredrickson, J. W. (1981). Poor performers: Supervisors' and subordinates' responses. Organizational Behavior and Human Performance, 27, 386-410.

Purpose: To investigate the reactions of supervisors to poor performers and the influence of feedback from supervisors on the attitudes and motivation of the poor performers.

Participants: 153 male and female undergraduate students.

Method: One person in each of 41 groups assumed the role of supervisor. subordinates performed a "catalog ordering" task. Four variables were manipulated:

* subordinate performance
* supervisor-subordinate interdependence
* supervisor power
* performance feedback to subordinates

Separate questionnaires were administered to assess the reactions of both subordinates and superiors to the subordinate's performance.

Results: Responses of supervisors toward subordinates were influenced by both the level of performance and the degree of interdependence. Subordinate's performance were not affected by the nature of the feedback or by the supervisor's power. Subordinates who received specific feedback rated it as more helpful and reported trying harder, than those who received general feedback.

Discussion: The specificity and appropriateness of feedback to subordinates may affect the perception of the feedback. Supervisor's responses to poor performers suggest a bias or halo effect that can affect performance evaluations.

Ivancevich, J. M., & McMahon, J. T. (1982). The effects of goal setting, external feedback, and self-generated feedback on outcome variables: A field experiment. Academy of Management Journal, 25, 359-372.

Purpose: To compare the impact of goal setting and feedback on several performance measures and supervisory ratings.

Participants: 209 engineers at six locations.

Method: Engineers were randomly assigned to Goal Setting or Non-Goal Setting treatment groups. Groups were divided as follows:

Goal Setting

* Supervisory feedback only
* Supervisory feedback and positive praise
* Self-generated feedback only

Non-Goal Setting

* General supervisory feedback only
* Feedback from co-workers in a group setting
* Annual performance evaluation only

Results: The results are the following:

* Goal Setting was superior to the Non-Goal Setting treatment for costs, quality control citations, and job satisfaction.

* Some form of feedback (Goal and Non-Goal treatments) was superior to no feedback what-so-ever for controlling costs, unexcused overtime completion, and higher organizational commitment.

* Self-generated feedback was superior to external feedback for costs, quality control citations, unexcused overtime completions, job satisfaction, and organizational commitment.

Discussion: The results showed that self-generated feedback was more effective than external feedback only. This contradicts the MBO literature which states that goal setting and feedback sessions must be formal and explicit.

Jacobs, R. & McGiffin, T. (1987). A human performance system using a structured on-the-job training approach. Performance and Instruction Journal, 25, 8-11.

Purpose: To describe a performance system designed to integrate the use of structured on-the-job training for lab technicians in a quality control laboratory.

Participants: 8 Lab Tech IIIs who conduct at least 18 different lab tests. Lab Tech IIIs are entry level, salaried employees.

Method: The existing training consisted of unstructured on-the-job training with a supervisor or experienced technician. The devised system consisted of a coaching program for supervisors and performance standards for Lab Tech IIIs in the form of job procedures for each of the 18 lab tests.

Results: The results showed the following:

* Training time was reduced from 12 weeks to less than 3 weeks for new hires.

* This reduction in training time has been calculated to represent a yearly savings of over $20,000.

* The structured OJT program provided a meas to provide periodic extrinsic feedback to experienced Lab Tech IIIs.

Discussion: Coaching has received much attention recently as a useful supervisory technique. In many instances, coaching can be considered as a means to provide feedback to subordinates. Within this context, the value of coaching, as a tool to improve job performance, is enhanced.

Kim, J. S. (1984). Effect of behavior plus outcome goal setting and feedback on employee satisfaction and performance. Academy of Management Journal, 27, 139-149.

Purpose: To determine what influence behavior and outcome oriented goal setting and feedback have on performance.

Participants: 101 salespersons from a large non-union retail business. These salespersons were from three departments of four separate store branches.

Method: A goal setting and feedback form was developed to measure selling behavior (i.e., the amount of time taken to approach a customer). The outcome goal setting and feedback form assessed sales goals. These goals were measured in dollar amounts.

The salespeople were divided into four groups:

Group	Types of Feedback
1. Behavior Oriented	1. Self-rating of behavior Supervisory rating Discussion of discrepancies Setting mutual goals
2. Outcome Oriented	2. Comparing target sales goals with individual achievement Setting mutual goals
3. Combination	3. Used all of the above
4. Control Group	4. Proceeded without change

Supervisors provided feedback every two weeks for five weeks. In addition, each person's hourly sales were monitored.

Results: The Combination Group increased productivity 32%. The Outcome Group experienced the second highest increase, followed by Behavior. The control group also improved 3%.

Discussion: Variables not considered in the study may have influenced the results. These variables include public commitment, accountability, goal setting context and persistence. Furthermore, supervisors should emphasize the procedure's context. Rewards, explicit goals, and publicity increase commitment to productivity.

Kim, J. S., & Hamner, W. (1976). Effect of performance feedback and goal setting on productivity and satisfaction in an organizaitonal setting. Journal of Applied Psychology, 61, 48-57.

Purpose: To investigate the effect of evaluative and non-evaluative feedback and goal-setting on performance and satisfaction in a large telephone company setting.

Method: The method was as follows:

* Group 1 received extrinsic feedback from a supervisor, once a week in a formal group meeting and in short, informal sessions with each employee.

* Group 2 received intrinsic, self-generated feedback as groups of employees would rate themselves about progress toward performance goals and service quality.

* Group 3 received both extrinsic and intrinsic feedback, as described above.

* Group 4 received weekly reminders about the goals from a supervisor. No feedback about progress to accomplishing the goals was provided.

Results: The results are the following:

* A combination of goal setting and feedback is superior to goal setting alone on the cost and safety measures of performance.

* Overall, providing extrinsic feedback was not different from intrinsic feedback. However, in the area of controlling costs, the combined effect of intrinsic and extrinsic feedback was superior.

* The greatest amount of improvement in terms of attitudes toward service quality was found in Group 3, who received both extrinsic and intrinsic feedback.

* Employee job satisfaction was equal across all groups.

Discussion: The importance of this study is that goal setting alone can enhance performance without a formal feedback program. But when intrinsic and extrinsic feedback are combined with goal setting, performance was enhanced even more. Feedback seems to have an additive effect on performance improvements made as a result of goal setting.

Komaki, J. L, Collins, R. L., & Penn, P. (1982). The role of performance antecedents and consequences on work motivation. Journal of Applied Psychology, 67, 334-340.

Purpose: To assess the effects of both performance antecedents and consequences on work motivation while keeping supervisory involvement and stimulus changes at a constant level.

Participants: The study was conducted in a poultry processing plant in the Southeast. Participants included approximately 200 employees in four departments.

Method: A multiple-baseline design across groups was used. Baseline data were repeatedly collected in all four departments. The introduction of the antecedent condition to the departments were staggered--5-week periods. In the same fashion the consequent condition was introduced to each of the four departments.

The antecedent control condition included:

* an explanation and illustration of the safety rules at an initial meeting
* the display of rules in each department
* a new rule highlighted three times a week
* supervisors discussing the rules at a weekly safety meeting

The consequent condition included:

* the explanation and interpretation of the feedback graph at an initial meeting
* the posting of the graph
* providing feedback three times a week
* supervisors discussing the feedback at a weekly meeting

Results: The comparison between the baseline and antecedent conditions showed mixed results--two departments showed no significant changes. All departments, however, improved during the consequent condition over the baseline and over the antecedent condition.

Discussion: This study helped clarify the roles of both performance antecedents and consequences and the issue of supervisory involvement. With feedback, employees improved their performance over their initial levels and any improvements that had occurred during the previous phase. The findings support previous field studies in which feedback was found to improve on results attained by training and rules and other antecedents such as goal setting.

Larson, J. R., Jr. (1986). Supervisors' performance feedback to subordinates: The impact of subordinate performance valence and outcome dependence. Organizational Behavior and Human Decision Processes, 37, 391-408.

Purpose: To examine the effects of two variables on supervisors' performance feedback to subordinate: the valence of the subordinate's performance, and the degree to which the supervisor's monetary outcomes are dependent on the subordinate's performance.

Participants: 64 undergraduate university students participated in the study.

Method: The study was conducted in a lab setting. The participants were paired with another student (a confederate of the experimenter). Role assignments were rigged so that the participants were given the supervisory role.

The supervisor's (participant's) task was to do their work task and supervise the subordinate on his/her task. Supervisors used eight feedback messages. They were also told that a bonus would be awarded to the supervisor who had the highest total performance score (which included the subordinate's performance).

A questionnaire was used to assess two dimensions of supervisor's feedback behavior were assessd--the frequency and specificity of performance feedback given.

Results: Supervisors were less likely to give performance feedback when the subordinate failed to meet performance goals than when he/she succeeded in meeting those goals. This effect occurred under conditions of both high and low outcome dependence and under conditions of both improving and worsening overall performance. It was also found that while supervisors gave less feedback about poor performance, that which they did give was more specific that the feedback they gave about good performance. Supervisors sometimes gave positive feedback even when the subordinate performed poorly. This occurred more often than would be expected from computation or procedural errors.

Discussion: The results provide support for the notion that supervisors may often be reluctant to give negative performance feedback. This reluctance can affect both the content and frequency of the feedback they give. Supervisors may on occasion simply choose not to give feedback about poor performance. When given, they are likely to do so in a way that minimizes the negative subordinate reactions.

Larson, J. R., Jr., Glynn, M., Fleenor, C. P., & Scontrino, M. P. (1986). Exploring the dimensionality of managers' performance feedback to subordinates. Human Relations, 39, 1083-1102.

Purpose: To examine the four dimensions of the informal performance feedback managers give to their subordinates. Previous have not studied whether the various feedback dimensions are empirically distinct.

Participants: 360 pairs of manager and subordinates from over 50 organizations.

Method: Two abbreviated versions of the Feedback Assessment Questionnaire were used to assess the timeliness, specificity, frequency, and sensitivity of manager's positive and negative performance feedback. Both the manager and supervisor completed the questionnaire anonymously.

Results: The results provide little evidence for the existence of four empirically distinct feedback dimensions. The four dimensions covaried so strongly as to be empirically indiscriminable.

Discussion: This study provided little evidence that the feedback dimensions are actually empirically distinct, with respect to the informal performance feedback that managers give to subordinates. The results suggest that it may be more appropriate to focus on the overall quality of the mangers' feedback than to treat each dimension separately.

Latham, G. P., & Kinne, S. B., III. (1974). Improving job performance through training in goal setting. Journal of Applied Psychology, 59, 187-191.

Purpose: To determine the influence of a goal setting training program on performance.

Participants: 20 pulpwood logging companies and their crews.

Method: A one day training program was designed. It consisted of a three-hour program followed by discussion. The companies were divided into two groups: control and experimental. The performance goal was presented to the experimental group as a minimum performance level. However, there were no penalties for not achieving. The control group received no goals. Instead, they were told this study measure the effects of turnover, injury, and absenteeism on production. Each individual was given a tally sheet as a means of self-feedback. Supervisors over each company were also given sheets monitoring absenteeism, turnover, injuries, and production. The study was conducted for 12 weeks following the training.

Results: Goal setting increased production considerably on a group and individual level. The crews experienced more of an increase as a whole than as individuals. Consequently, improvement in small areas can have a significant effect in a balanced system.

Discussion: Goal setting training can increase production and decrease absenteeism. To be effective, companies should teach their employees to set task objective. Then the employees should be given feedback about their performance. Such knowledge of results provides meaning to a task. When employees feel their task is significant, absenteeism drops. Once an employee has achieved goals he has set, he will raise his expectation of himself. This will result in higher goals because the employee sees that success is possible. Therefore, goals need to be specific and achiev

Liden, R. C., & Mitchell, T. R. (1985). Reactions to feedback: The role of attributions. Academy of Management Journal, 28, 291-308.

Purpose: To examine how subordinates respond to their supervisors causal inferences. To examine the effect of a supervisor's references to:

* blame on internal or external causes
* consistency (does subordinate often perform poorly?)
* distinctiveness (how does subordinate perform on other tasks)
* consensus (how did others perform?)

Participants: 165 business students from a western college, and 138 from an eastern college.

Method: Students were given 1 of 27 possible cases. The students then responded to questions about the case. They were told that this would help faculty asses their feedback to students. Therefore, they were asked to respond as the student in the case.

All the cases stated that the student received a D in a course. The student decided to discuss the grade with the professor. The professor then provided the feedback, which varied according to the case.

Results: Students rated specific feedback as more helpful and higher quality than non-specific. The specific feedback combined distinctiveness, consistency, and consensus. Students also preferred feedback that attributed the problem to an external cause.

Discussion: The most effective feedback is specific, comparing past and peer performance. Even negative feedback is more acceptable if it includes these dimensions. Specific information provided by the supervisor helps the individual draw accurate conclusions about his/her performance. Specific feedback also increased respect for the supervisor.

Ambiguous feedback was rated the same as negative feedback suggesting an internal cause. Finally, when consistency, distinctiveness and consensus indicated internal causes, students gave up trying.

O'Reilly, C. A., III, & Anderson, J. C. (1980). Trust and the communication of performance appraisal information: The effect of feedback on performance and job satisfaction. Human Communication Research, 6, 290-298.

Purpose: To explore the dimensionality of the feedback construct, the relationships of feedback to individual performance and satisfaction of managers, and the moderating effects of trust on these associations.

Participants: Respondents were managerial personnel from a West Coast manufacturing firm.

Methods: Participants completed a questionnaire which measured of the following factors:

* Feedback--quantity, timeliness, usefulness, sign (positive or negative), relevance, and sources;
* Trust in the superior; and
* Job satisfaction--work itself, supervision, pay, co-workers, and opportunities for advancement.

Supervisors of each manager completed a second questionnaire to obtain a measure of each individual's performance.

Results: The feedback construct was defined in terms of three dimensions:

* Developmental nature of feedback;
* Amount of feedback; and
* Relevance and accuracy of feedback.

The overall correlations between job satisfaction and feedback were significant. When feedback was characterized as being more accurate and relevant, more developmental, and more in quantity, job satisfaction was higher.

A weak support for the relationship between performance and the feedback indices was found. Trust was significantly related to the feedback indices and job satisfaction, but not to performance. The high-trust subgroup perceived feedback to be more relevant and accurate and greater in quantity than the low-trust subgroup.

Discussion: Based on the positive correlations between feedback and job satisfaction and the weak relationships between feedback and performance, it appears that one of the primary benefits of feedback in this study is its association with attitudes rather than performance; that is, when feedback is higher on the three dimensions, respondents express greater satisfaction.

Panyan, M., Boozer, H., & Morris, N. (1970). Feedback to attendants as a reinforcer for applying operant techniques. Journal of Applied Behavior Analysis, 3, 1-4.

Purpose: To investigate the reinforcing properties of a feedback procedure in an attempt to maintain the daily use of operant training methods by non-professional hall personnel.

Participants: 34 non-professional hall personnel of four of 11 living units (halls) in a state institution for retarded children.

Method: Staff received formal classroom training in operant conditioning. On completion, the staff returned to their respective halls to incorporate operant training methods in their daily routine. They were instructed to conduct training sessions and to keep daily performance records on each child in training.

Multiple baseline procedures were used to establish the levels of performance for the four halls analyzed in this study.

Feedback procedures included weekly delivery and posting of feedback sheets.

Results: The results indicated a large decrease in the percent of training sessions conducted during the baseline period. After the feedback system was implemented the performance level in these halls increased and was maintained at a high level.

The results for the hall where baseline performance was not established, indicated performance levels which were maintained at a relatively high level over a 34 week period.

Discussion: This study used one method of performance feedback--weekly delivery and posting of feedback sheets--which increased the percentage of training sessions conducted by the staff. The data suggest that the longer the hall staff operated in the absence of the reinforcement contingency, the longer it took for that staff's performance to be changed by the contingency. The data from the fourth hall suggest that initiating the feedback procedures as soon as possible after formal training is an effective means of maintaining high performance levels.

Payne, R. B., & Hauty, G. T. (1955). Effects of psychological feedback upon work decrement. Journal of Experimental Psychology, 50, 343-351.

Purpose: To determine the effects of directive and motivational techniques upon task deterioration.

Participants: 144 volunteer airmen in their twenties.

Method: The airmen participated in an aircraft simulation. Scores were based upon their ability to keep four pointers on zero. The entire exercise was five hours in duration.

The first variable considered was directive feedback. The control group relied upon their own scanning, without feedback. The second group had a peripheral visual signal which activated when an arrow drifted. However, it did not tell the airman which pointer shifted. The third group was given instruments signaling the location of the drifting arrow.

The motivational variable was examined by varying information about each man's progress. The control group received no information about their standing. The second group periodically received a standing compared to the group norm. The final group kept all of their scores in view.

Results: The group that had immediate, precise error warning performed better than the others. The two groups that knew their standing performed better than the control group. The group that had their score history did not significantly surpass group two.

Discussion: Both directive and motivational techniques have immediate consequence on performance. However, neither prevent work quality decline for extended time periods.

Sims, H. P., Jr., & Szilagyi, A. D. (1979). Leader reward behavior and subordinate satisfaction and performance. Organizational Behavior and Human Performance, 14, 426-438.

Purpose: To explore the relationship between perceptions of leader reward behavior and subordinate satisfaction and performance in a health care environment.

Participants: Full-time paramedical and support personnel at a major midwestern university's medical center classified in one of four occupational skills: administrative, professional, technical and service.

Method: A questionnaire was used to measure the following:

* Leader reward behavior--the degree to which subordinates perceived that rewards received (feedback) reflected performance on the job--Positive Reward Behavior and Punitive Reward Behavior.

* Job satisfaction--of the work itself, the supervision, the pay, the co-workers, and the opportunities for promotion on the job.

* Performance evaluation--the degree to which the individual carries out their job in adherence to certain specified standards of the organization.

Results: The results indicate:

* a positive relationship between positive reward behavior and all satisfaction variables across the four skill groups.

* a positive relationship between positive reward behavior and performance for the professional, technical, and service groups.

* a negative relationship between punitive reward behavior and satisfaction was only supported for satisfaction with pay for the service group. A positive relationship between punitive reward behavior and satisfaction with work, pay and promotion were found with the administrative group.

* a negative relationship between punitive reward behavior and performance for the administrative and service groups.

Discussion: The findings of this study were slightly different than that found in previous studies. This possibly could be attributed to the differences in the nature of the task performed by each group, the career paths or promotional structures of the organizations (i.e., banks vs. hospitals).

Stone, D. L., Gueutal, H. G., & McIntosh B. (1984). The effects of feedback sequence and expertise of the rater on perceived feedback accuracy. Personnel Psychology, 37, 487-506.

Purpose: To determine the perceptions of feedback resulting from sequencing, and rater expertise. To determine the role of self-esteem and locus of control in accepting feedback.

Participants: 107 graduate students studying personnel management.

Method: Students were divided into 4 groups. Two personality measures were used to assess self-esteem and locus of control. Participants were asked to participate in an in-basket task. All of the students were given identical written feedback. Only sequence and rater expertise were manipulated. Expertise was manipulated by changing the rater's name, title, and experience. Students were asked to respond to a measure concerning their perceptions of the feedback.

Results:

* Feedback using a positive-negative sequence was perceived as more accurate than negative-positive.

* Sequencing only influenced feedback provided by a rater with high expertise. There was not sequence effect if the rater was perceived with low expertise.

* Individuals with an internal locus of control were affected more by sequencing. Those with medium and low locus of control showed no influence by sequencing.

* Those with high self-esteems perceived positive-negative feedback as more accurate. Low self-esteem persons showed no perceptual difference in accuracy with sequencing.

Discussion: Initial praise increases acceptance of negative feedback, while beginning with criticism creates a defensive response. Individuals value information presented earlier than information presented later. However, the praise influence was dependent on rater expertise, locus of control, and self-esteem.

Internals tend to hear a raters initial comments, base the favorability of the feedback on that, and disregard the rest. Positive feedback may not be rewarding for low self-esteem/externals because it may not be perceived as credible. Raters should focus initial positive feedback on minor areas to put the subject at ease, then move to major areas. Use expert raters to increase credibility.

Sulzer-Azaroff, B., & DeSantamaria, M. C. (1980). Industrial saftey hazard reduction through performance feedback. Journal of Applied Behavior Analysis, 13, 287-295.

Purpose: To analyze the reliability and generality of feedback in reducing safety hazards during the experiment as well as during the follow-up. To determine if the intervention and any correlated improvement would persist following formal termination of the study.

Participants: The study was conducted in the main factory of a private industrial organization that developed and manufactured custom-fabricated products. Six production supervisors participated in carrying out the "feedback package".

Method: A multiple baseline across-subjects design was used to assess the impact of the feedback and approval or corrective suggestions on the frequency and types of hazards.

Data were recorded at randomly chosen times once each day for 12 weeks. Four follow-up sessions were conducted following the formal experiment over a 4-month period.

Supervisors followed a semiweekly feedback schedule once baseline levels were established. The feedback package consisted of presenting the supervisors with copies of (written):

* feedback as to the number and location of hazards;
* specific suggestions for improvement; and
* any positive evaluative comments merited by accomplishments.

Results: Results were similar for all departments. A downward trend of hazard frequencies was observed throughout the feedback phase and maintained during follow-up. The mean frequency of hazard rates during the feedback phase were lower and less variable than during the baseline phase. Hazard frequencies dropped by 60 percent, averaged across departments, following the feedback.

Discussion: The results suggest that a simple, natural "feedback package" can be effective in reducing frequencies of specific hazards in a small industrial plant. The primary value of the program was its simplicity and ease with which it could be incorporated within a supervisor's routine. Positive spin-off effects accompanying the present program were also observed.

AUTHORS

Ronald L. Jacobs, Ph.D., is an assistant professor and coordinator of the graduate program in Training and Development, Department of Educational Studies, 160 Ramseyer Hall, The Ohio State University, Columbus, 43210.

Gayle T. Shibano is a doctoral student in the area of Comprehensive Vocational Education with additional studies in Training and Development, Research, and Evaluation, The Ohio State University.

Tricia Emerson is a master's degree student in the area of Training and Development, The Ohio State University.